



Original communication

Mortality among homeless and unclaimed bodies in Mangalore city – An insight

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ABSTRACT

Homelessness is a social as well as legal stigma on a Country's development index. In addition homeless people are exposed to increased incidence of diseases and accidents. Mangalore city, a bustling city located in Southern coastal region of India, has seen tremendous growth in the past few years; with this the problem of migrants and homeless has also increased. This has invited a spectrum of problems relating to law and order including frequent incidences of unclaimed dead bodies, both due to natural and unnatural causes. This autopsy based study tries to highlight the situation of picture of homeless deaths in Mangalore and the problems faced by the Law enforcing authorities.

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1. Introduction

Homelessness is often associated with increased risk of mortality due to multitude of reasons. 'Rooflessness' is one form of homelessness, covering rough sleepers, newly arrived immigrants and victims of fire, floods or violence.¹ Studies on death of homeless or unclaimed bodies are scarce in India as per our knowledge and needs to be researched. Mangalore is a bustling coastal city of Karnataka state in South India and capital of Dakshina Kannada District. It is home to a population of around four lakh people with a floating population in thousands.² As the city is growing at a fast rate with high-rise apartments coming up at every nook and corner, this invites problems in the form of migration of construction workers and homeless from surrounding less developed Districts making it as their abode. As per the 2001 census there are around 32 recognized slums with a population of around 22,000 migrant laborers in Mangalore city.³ "Unclaimed body" refers to a person who dies in a hospital, prison or public place, which has not been claimed by any near relatives or personal friends within such time period as may be prescribed.⁴ According to the Police Manual, a dead body is declared unclaimed only after 3 days after which the

police are legally authorized to dispose off the body as per the local customs.⁵

These unclaimed bodies may pose a challenge to the autopsy surgeon and also to the law enforcing authorities, as in most of these cases the victim will be found dead which may arouse suspicion of foul play. In addition DNA profiling of unclaimed or unidentified bodies is not a routine or recommended protocol in India due to lack of funds and infrastructure. In addition the problems associated with homeless and unclaimed dead bodies can (1) Identification, (2) Cause and manner of death, (3) poor access to health care and health awareness, (4) substance abuse, (5) alcoholism, (6) physical abuse of the children, etc. In this scenario the autopsy surgeon and the law enforcing authorities have to rely upon age old methods of identifying the dead bodies, but this may not be possible in a putrefied or dismembered body resulting in negative identification. We reviewed records of autopsy cases over a period of 7 years between 2004 and 2010 in the department of Forensic Medicine and Toxicology, Mangalore India to determine the profile of deaths involving unclaimed dead bodies recovered in Mangalore city.

2. Material and methods

The study was conducted in the Department of Forensic Medicine and Toxicology, Kasturba Medical College, Mangalore, India. The autopsy records of all the unclaimed bodies were reviewed

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Table 1
Year wise distribution of unclaimed bodies.

Year	Number of cases (n = 336)	% of total number of cases	Male (n = 301)	Female (n = 35)
2004	37	11.0	33	4
2005	58	17.2	49	9
2006	57	16.9	49	8
2007	58	17.2	53	5
2008	47	13.9	45	2
2009	52	14.5	47	5
2010	27	8.0	25	2

retrospectively over a period of 7 years from 2004 to 2010. Information regarding unclaimed bodies with regards to age, sex, cause of death and manner of death was sourced from the autopsy reports and the inquest papers of the Investigating officer. The age of the deceased was ascertained with the available data from the Investigating officer and was corroborated with anatomical features on the dead body.

3. Results

A total of 4271 autopsy cases were registered during the study period, out of which 336(7.11%) were unclaimed bodies (Table 1). The majority of cases belonged to male 301(89.58%) as compared to females 35(10.41%) (Table 1). The average age of the victim was 42.8 years with a range of 1 month to 80 years. Most unclaimed bodies were in the age group of 21–40 years (78.27%) and least affected age group was 1–20 years 7(2.08%) (Table 2). The most common manner of death was suicide 123(36.6%), followed by accidents 121(36.0%), natural 89(26.48%) and homicides 3(0.89%) (Table 3).

The most common cause of natural death in males was chronic lung disease 44(56.41%) followed by heart disease 12(15.38%), septicemia 10(12.82%), miscellaneous 6(7.69%), cerebrovascular accident 2(2.56%) and cerebral melanoma 1(1.28%). The cause of death in 3(3.84%) cases was unascertained (Table 3). In females the commonest cause of natural death was chronic lung disease 9(81.81%) followed by gastroenteritis 1(9.09%) and heart disease 1(9.09%) (Table 4).

Railway and road traffic accidents accounted for 66(61.68%) of accidental deaths in males whereas in females they accounted for 13(92.85%). Drowning was second most common cause of accidental deaths in males 27(25.23%).

Table 2
Age wise distribution of unclaimed bodies.

Age group (in years)	Number of cases (n = 336)	% of total cases
0–20	7	2.08
21–40	263	78.27
41–60	33	9.82
>60	33	9.82

Table 3
Manner of death in males and females.

Manner	Males		Females	
	Number of cases (n = 301)	% of total cases	Number of cases (n = 35)	% of total cases
Natural	78	25.91	11	31.42
Accidental	107	35.54	14	40
Suicidal	115	38.20	8	22.85
Homicidal	1	0.33	2	5.71

Table 4
Deaths due to natural causes in males.

Cause of death	Number of cases (n = 78)	% of total cases
Chronic lung disease	44	56.41
Heart disease	12	15.38
Septicemia	10	12.82
Cerebrovascular accident	2	2.56
Cerebral melanoma	1	1.28
Unascertained	3	3.84
Miscellaneous (Gastroenteritis, cirrhosis, oesophageal varices, cerebral melanoma, Hepatitis B)	6	7.69

The commonest mode of suicide among males was by poisoning 56(48.69%) (Table 5), while drowning was the only mode of suicide in females 8(100%) reported in our study. Two homicidal strangulation cases were reported in females and one case of infanticide was reported in males. Majority of the cases of deaths were reported during rainy season 251(74.70%), followed by winter 55(16.36%) and summer season 30(8.92%).

4. Discussion

A high mortality rate in homeless is partly attributed to increased prevalence of morbidity, but homelessness itself acts as an additional risk factor.^{1,6,7} Mortality rate is higher in young homeless when compared to elderly.^{8–10}

The results of our study indicate a male preponderance and this is in confirmation with previous studies conducted in South Delhi, Istanbul, Fulton County and Osaka city.^{4,11–13}

The commonest age group involved was 21–40 years followed by 41–60 and >60 years, which is similar to South Delhi, India study⁴ but this was in contrast to the observations made in a study done in Istanbul, Turkey.¹²

The predominant manner of death was suicide followed by accident and natural causes which was in contrast to studies in South Delhi and Istanbul, where deaths due to natural causes were most common followed by accident, homicide and suicide. The probable reasons could be attributed to lack of road safety measures provided by the city administration and awareness of the general public. Suicide was the second commonest manner of death which could be attributed to poverty, disease and mental distress. Natural causes were third most common cause and may be under reported due to poor access to health care facilities in a developing Country like India. The sex wise distribution of manner of death was in accordance with the entire population (Table 6).

Table 5
Deaths due to natural causes in females.

Cause of death	Number of cases (n = 11)	% of total cases
Chronic lung disease	9	81.81
Gastroenteritis	1	9.09
Heart disease	1	9.09

Table 6
Suicidal causes of death in males.

Cause of death	Number of cases (n = 115)	% of total cases
Poisoning	56	48.69
Drowning	31	26.95
Hanging	23	20
Railway	3	2.6
Burns	2	1.73

The commonest natural cause of death in males and females was chronic lung disease, followed by heart disease and septicemia. This can be attributed to poor living conditions, alcohol abuse and poor access to health care.

5. Conclusion

The findings of our study indicate that homelessness is an important cause of morbidity and mortality in the city of Mangalore located in South India. Males are the most affected population with the common age group being affected is 21–40 years and the predominant manner of death is suicide. However more studies are recommended to know the actual prevalence of homelessness and its health related ill effects on morbidity and mortality, which will help in proper distribution of health care facilities to the needy. The question of identification of homeless or unclaimed dead bodies has to be answered with greater importance as DNA profiling of unclaimed bodies is not a routine procedure in this part of the World due to financial and manpower constraints. As with every retrospective study this study has its limitations, and the authors would propose prospective studies to be conducted in the future to bring out more facts in relation to deaths in homeless.

Conflict of interest
None.

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Ethical approval
None.

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References

1. Nat MJW, Charlotte NET. How can health services effectively meet the health needs of homeless people? *Br J Gen Pract* April 2006;286–93.
2. Mangalore City Corporation,(online). Available: URL <http://www.mangalorecity.gov.in/> [accessed 10.06.11].
3. Mangalore Grows,(Online). Available: URL <http://mangaloregrows.weebly.com/index.html> [accessed 15.06.11].
4. Arvind K, Sanjeev L, Behera C, Ravi R, Dogra TD. Deaths of homeless unclaimed persons in South Delhi (2001–2005): a retrospective review. *Med Sci Law* 2009;49:46–50.
5. Koshy K. *Punjab police rules*, vol. III. The Bright Law House; 1992. pp. 1078–83.
6. David SM. Homelessness as an independent risk factor for mortality: results from a retrospective cohort study. *Int J Epidemiol* 2009;38:877–83.
7. Cheung AM, Hwang SW. Risk of death among homeless women: a cohort study and review of the literature. *CMAJ* 2004;170:1243–7.
8. Nordentoft M, Wandall-Holm N. 10 year follow up study of mortality among users of hostels for homeless people in Copenhagen. *Br Med J* 2003;327:81–4.
9. Roy E, Haley N, Leclerc P, Sochanski B, Boudreau J, Boivin J. Mortality in a cohort of street youth in Montreal. *JAMA* 2004;292:569–74.
10. Roy E, Boivin J, Haley N, Lemire N. Mortality among street youth. *The Lancet* 1998;352:32.
11. Altun G, Yilmaz A, Azmak D. Deaths among homeless people in Istanbul. *Forensic Sci Int* 1999;99(2):143–7.
12. Büyük Y, Uzün I, Eke M, Cetin G. Homeless deaths in Istanbul, Turkey. *J Forensic Leg Med* 2008;15(5):318–21.
13. Ohsaka T, Sakai Y, Kuroda K, Matoba R. A survey of deaths of homeless people in Osaka City. *Nippon Koshu Eisei Zasshi* 2003;50(8):686–96.